A3

Prior Art: An ADSL system for carrying out a communication method in accordance with the invention is of the splitterless type, thereby making it possible to convey both voice and data signals over a single twisted pair telephone cable.

Page 6, lines 5-8, delete current paragraph and insert therefor:

A4

In as much as the present system is an improvement over a prior art ADSL system of the splitterless type and uses many of the same components, the present system and its advantages over an existing system can best be understood by first considering the prior art system illustrated in Figs. 1, 2 and 3.

Page 8, lines 3-8, delete current paragraph and insert therefor:

A5

The Invention: In a method in accordance with the invention and in a splitterless ADSL system for carrying out this method to convey voice and data signals simultaneously over a single twisted pair telephone cable, the disadvantages of prior art systems are overcome, particularly in regard to voice transmission. Instead of a single voice channel, an ADSL system in accordance with the invention has incorporated therein several high-quality telephone channels.

Page 8, lines 9-15, delete current paragraph and insert therefor:

A6

The multi-tone modulation technique included in a system in accordance with the invention acts to separate the available bandwidth into a multiplicity of distinct carriers, each functioning as a communication channel. This makes it possible to convey voice and digital data signals simultaneously on different channels. In practice the DMT-ADSL splitterless system for short distances such as 9000 feet can support up to 8 telephone channels upstream with a bit rate of up to 250 Kb/s, and downstream with a bit rate of up to 6 Mb/s.

Page 8, lines 21-29, delete current paragraph and insert therefor:

A7

Two upstream carriers and two downstream carriers are utilized for one voice channel which are hereinafter called "voice carriers" (VCs). The VCs are not predetermined before the onset of

communication. During an initialization process, the ADSL system measures the (SNR) signal-to-noise ratio for each carrier and defines the number of bits that may be loaded on respective carriers. Two downstream and two upstream carriers having the highest SNR which are capable of carrying more than 8-bits are then assigned for voice transmission. The selected carriers can carry more than 8 bits for each symbol. Nevertheless, they are only loaded with 8 bit symbols, as can be seen in black shading in the graph.

Page 11, lines 3-10, delete current paragraph and insert therefor:

Data Processing: Fig. 8A is a flow chart of the data processing steps implemented in an ATU transmitter (ADSL Transceiver Unit) according to the present invention. Data 153 is processed in step 151 by an interface port resulting in a sequence of ATM (Asynchronous Transfer Mode) cells. In step 155 these cells are scrambled and RS encoded. In step 157, an interleaver mixes data bits to protect the encoded blocks of data from impulse noise. In step 263 tone ordering is calculated for the interleaved encoded data and the data is distributed to 128 tones or carriers of the multitone line signal.

Page 14, lines 26-29 and Page 15, lines 1-2, delete current paragraph and insert therefor:

Incorporating several digital voice channels of the CO: An ATU-C transmitter in accordance with the invention is well adapted to incorporate electronic communication equipment of the CO, such as a PCM telephone switch (frame relay) having an ANSI T1 interface. According to a preferred embodiment of the invention, several streams of PCM telephone words of the CO are readily processed and communicated through the ADSL system.

Page 15, lines 3-13, delete current paragraph and insert therefor:

Data is processed in the same way as in the first example. Fig. 12 illustrates schematically the incorporation of a T1 format data stream containing several digital telephone channels into the ADSL system. First, the data stream 271 coming from a frame relay in T1